



IFW16

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004

TIME: 11:45:23

Input Set : A:\Mo5176new_rev.txt
 Output Set: N:\CRF4\07272004\I303232C.raw

2 <110> APPLICANT: Bayer Aktiengesellschaft
 4 <120> TITLE OF INVENTION: Nucleic Acids which encode
 5 insect acetylcholine receptor subunits
 7 <130> FILE REFERENCE: Le A 33 020-Foreign Countries
 9 <140> CURRENT APPLICATION NUMBER: US/09/303,232C
 10 <141> CURRENT FILING DATE: 1999-04-30
 12 <150> PRIOR APPLICATION NUMBER: DE 198 19 829.9
 13 <151> PRIOR FILING DATE: 1998-05-04
 15 <160> NUMBER OF SEQ ID NOS: 14
 17 <170> SOFTWARE: PatentIn Ver. 2.1
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 2886
 21 <212> TYPE: DNA
 22 <213> ORGANISM: Drosophila melanogaster
 24 <220> FEATURE:
 25 <221> NAME/KEY: CDS
 26 <222> LOCATION: (372)..(2681)
 28 <400> SEQUENCE: 1
 29 ggcacgagaa aaagttgtgg tataaacttt tatttagga aaacgcataa aaataataga 60
 31 aaaacgctct tcgggttcta aagaaaataa gaagacaaaa gaaagacatg aaaacgttgc 120
 33 aaacaataaa gcataactt gccatattga tataaaggga aatcgtaaa aggcggtaa 180
 35 aatttcgtaa gattagttgg tattaagggc agccatgca cacagctaaa aagggaacta 240
 37 aaaaaacccc gcacagaaca atgaaagctg cagcagctgg ataaggccga caaaaccgaa 300
 39 aatttatatta ttgtaatcta gtagagagca gacaacatat ccgctggcaa caaccaacac 360
 41 cggaaagagac t atg aaa aat gca caa ctg aaa ctg act gaa gtt gac gat 410
 42 Met Lys Asn Ala Gln Leu Lys Leu Thr Glu Val Asp Asp
 43 1 5 10
 45 gat gag ctg tgg ctg gca gta aga tta gcg cac tgc agc agc aac ttt 458
 46 Asp Glu Leu Trp Leu Ala Val Arg Leu Ala His Cys Ser Ser Asn Phe
 47 15 20 25
 49 agc agc agt agc agc aca aga acc acc agc agc aac cag agg cac aac 506
 50 Ser Ser Ser Ser Thr Arg Thr Thr Ser Ser Asn Gln Arg His Asn
 51 30 35 40 45
 53 cag caa ctc aca aca ctg caa cca agg agc tta agt aca aaa cac cac 554
 54 Gln Gln Leu Thr Thr Leu Gln Pro Arg Ser Leu Ser Thr Lys His His
 55 50 55 60
 57 agc aac att gca agc gag cag cac aat agc cag caa cag gag cca gca 602
 58 Ser Asn Ile Ala Ser Glu Gln His Asn Ser Gln Gln Glu Pro Ala
 59 65 70 75
 61 tcg aag gac gag gat gta gcc aac cac ggt aga agc aat gac cag cag 650
 62 Ser Lys Asp Glu Asp Val Ala Asn His Gly Arg Ser Asn Asp Gln Gln
 63 80 85 90
 65 acg cat ctg caa cag cta gac agc aac atg ttg tcg cca aag aca 698



RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004

TIME: 11:45:23

Input Set : A:\Mo5176new_rev.txt

Output Set: N:\CRF4\07272004\I303232C.raw

66	Thr	His	Leu	Gln	Gln	Leu	Asp	Ser	Ser	Asn	Met	Leu	Ser	Pro	Lys	Thr	
67		95				100						105					
69	gcc	gca	gca	gca	act	gct	gcc	ggc	gat	gaa	gca	aca	acc	caa	caa	cca	746
70	Ala	Ala	Ala	Ala	Thr	Ala	Ala	Gly	Asp	Glu	Ala	Thr	Thr	Gln	Gln	Pro	
71	110					115					120					125	
73	aca	aac	ata	aga	ctg	tgt	gca	cgc	aag	cga	caa	cga	ttg	cgt	cgc	cga	794
74	Thr	Asn	Ile	Arg	Leu	Cys	Ala	Arg	Lys	Arg	Gln	Arg	Leu	Arg	Arg	Arg	
75						130					135					140	
77	cga	aaa	aga	aaa	cca	gca	acc	cca	aac	gaa	aca	gat	atc	aag	aaa	caa	842
78	Arg	Lys	Arg	Lys	Pro	Ala	Thr	Pro	Asn	Glu	Thr	Asp	Ile	Lys	Lys	Gln	
79						145					150					155	
81	cag	caa	ctt	agc	atg	cct	ccc	ttc	aaa	acg	cgc	aaa	tcc	acg	gac	acc	890
82	Gln	Gln	Leu	Ser	Met	Pro	Pro	Phe	Lys	Thr	Arg	Lys	Ser	Thr	Asp	Thr	
83						160					165					170	
85	tac	agc	aca	cca	gca	aca	acc	agc	tgt	ccg	aca	gcc	acc	tac	atg		938
86	Tyr	Ser	Thr	Pro	Ala	Ala	Thr	Thr	Ser	Cys	Pro	Thr	Ala	Thr	Tyr	Met	
87						175					180					185	
89	caa	tgt	cga	gcc	agc	gac	aat	gag	ttc	agt	att	ccg	ata	tcg	aga	cat	986
90	Gln	Cys	Arg	Ala	Ser	Asp	Asn	Glu	Phe	Ser	Ile	Pro	Ile	Ser	Arg	His	
91	190					195					200					205	
93	gat	aga	gta	tcc	acg	gcc	aca	ttc	gcc	tgg	gtg	ttg	cat	gtg	ctg	cag	1034
94	Asp	Arg	Val	Ser	Thr	Ala	Thr	Phe	Ala	Trp	Val	Leu	His	Val	Leu	Gln	
95						210					215					220	
97	gtg	ctg	ctc	gtg	tcg	ctg	caa	cag	tgg	caa	ctt	cac	gtg	caa	cag	cga	1082
98	Val	Leu	Leu	Val	Ser	Leu	Gln	Gln	Trp	Gln	Leu	His	Val	Gln	Gln	Arg	
99						225					230					235	
101	tcg	gtg	cta	ctg	ttc	aga	agg	atc	gca	gcg	agc	acc	atc	gcc	ttc	att	1130
102	Ser	Val	Leu	Leu	Phe	Arg	Arg	Ile	Ala	Ala	Ser	Thr	Ile	Ala	Phe	Ile	
103						240					245					250	
105	tcc	tat	tta	ggc	agc	ttt	gca	gcg	caa	ctg	aaa	aat	agc	agc	agc	agc	1178
106	Ser	Tyr	Leu	Gly	Ser	Phe	Ala	Ala	Gln	Leu	Lys	Asn	Ser	Ser	Ser	Ser	
107						255					260					265	
109	agt	agc	agc	aac	agc	agc	aac	agc	agc	agc	acg	caa	ata	tta	aac		1226
110	Ser	Ser	Ser	Asn	Ser	Ser	Asn	Asn	Ser	Ser	Thr	Gln	Ile	Leu	Asn		
111	270					275					280					285	
113	gga	ctt	aat	aaa	cac	tca	tgg	ata	ttt	tta	ttg	ata	tat	ttg	aat	tta	1274
114	Gly	Leu	Asn	Lys	His	Ser	Trp	Ile	Phe	Leu	Leu	Ile	Tyr	Leu	Asn	Leu	
115						290					295					300	
117	tct	gct	aaa	gtt	tgc	cta	gca	gga	tat	cat	gaa	aag	aga	ctg	tta	cac	1322
118	Ser	Ala	Lys	Val	Cys	Leu	Ala	Gly	Tyr	His	Glu	Lys	Arg	Leu	Leu	His	
119						305					310					315	
121	gat	ctt	ttg	gat	cct	tat	aat	aca	cta	gaa	cgt	ccc	gtt	ctc	aat	gaa	1370
122	Asp	Leu	Leu	Asp	Pro	Tyr	Asn	Thr	Leu	Glu	Arg	Pro	Val	Leu	Asn	Glu	
123						320					325					330	
125	tcg	gac	ccg	tta	caa	tta	agc	ttt	ggt	tta	act	tta	atg	caa	att	atc	1418
126	Ser	Asp	Pro	Leu	Gln	Leu	Ser	Phe	Gly	Leu	Thr	Leu	Met	Gln	Ile	Ile	
127						335					340					345	
129	gat	gtg	gac	gag	aaa	aat	caa	ttg	cta	gtc	act	aat	gtg	tgg	tta	aaa	1466
130	Asp	Val	Asp	Glu	Lys	Asn	Gln	Leu	Leu	Val	Thr	Asn	Val	Trp	Leu	Lys	

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004
TIME: 11:45:23

Input Set : A:\Mo5176new_rev.txt
Output Set: N:\CRF4\07272004\I303232C.raw

131	350	355	360	365														
133	ctg	gag	tgg	aac	gac	atg	aat	ctc	cgc	tgg	aac	acc	tcc	gac	tat	ggc	1514	
134	Leu	Glu	Trp	Asn	Asp	Met	Asn	Leu	Arg	Trp	Asn	Thr	Ser	Asp	Tyr	Gly		
135						370					375					380		
137	gga	gtt	aag	gat	ctg	cga	ata	ccg	ccg	cat	cgc	atc	tgg	aag	ccg	gac	1562	
138	Gly	Val	Lys	Asp	Leu	Arg	Ile	Pro	Pro	His	Arg	Ile	Trp	Lys	Pro	Asp		
139												385				390	395	
141	gtg	ctg	atg	tac	aac	agt	gct	gat	gag	gga	ttt	gac	ggc	acc	tac	cag	1610	
142	Val	Leu	Met	Tyr	Asn	Ser	Ala	Asp	Glu	Gly	Phe	Asp	Gly	Thr	Tyr	Gln		
143												400				405	410	
145	acg	aac	gtg	gtg	gtg	cgg	aac	aac	ggc	tcg	tgt	cta	tac	gtt	ccg	ccg	1658	
146	Thr	Asn	Val	Val	Val	Arg	Asn	Asn	Gly	Ser	Cys	Leu	Tyr	Val	Pro	Pro		
147												415				420	425	
149	ggg	atc	ttc	aag	tcg	acg	tgc	aag	atc	gac	atc	acg	tgg	ttc	ccc	ttc	1706	
150	Gly	Ile	Phe	Lys	Ser	Thr	Cys	Lys	Ile	Asp	Ile	Thr	Trp	Phe	Pro	Phe		
151												430				435	440	445
153	gat	gac	cag	cgg	tgc	gag	atg	aag	ttc	ggc	agt	tgg	acc	tac	gac	gga	1754	
154	Asp	Asp	Gln	Arg	Cys	Glu	Met	Lys	Phe	Gly	Ser	Trp	Thr	Tyr	Asp	Gly		
155												450				455	460	
157	ttc	cag	ctg	gat	tta	caa	tta	caa	gat	gaa	act	ggc	ggt	gat	atc	agc	1802	
158	Phe	Gln	Leu	Asp	Leu	Gln	Leu	Gln	Asp	Glu	Thr	Gly	Gly	Asp	Ile	Ser		
159												465				470	475	
161	agt	tac	gtg	ctc	aac	ggc	gag	tgg	gaa	cta	ctg	ggt	gtg	ccc	ggc	aaa	1850	
162	Ser	Tyr	Val	Leu	Asn	Gly	Glu	Trp	Glu	Leu	Leu	Gly	Val	Pro	Gly	Lys		
163												480				485	490	
165	cgt	aac	gag	atc	tat	tac	aac	tgc	tgc	ccg	gaa	ccc	tat	ata	gac	atc	1898	
166	Arg	Asn	Glu	Ile	Tyr	Tyr	Asn	Cys	Cys	Pro	Glu	Pro	Tyr	Ile	Asp	Ile		
167												495				500	505	
169	acc	ttc	gcc	atc	atc	atc	cgc	cga	cga	aca	ctg	tac	tat	ttc	ttc	aatc	1946	
170	Thr	Phe	Ala	Ile	Ile	Ile	Arg	Arg	Arg	Arg	Thr	Leu	Tyr	Tyr	Phe	Phe	Asn	
171												510				515	520	525
173	ctg	atc	ata	cct	tgt	gta	ctg	att	gcc	tcc	atg	gcc	ttg	ctc	gga	ttc	1994	
174	Leu	Ile	Ile	Pro	Cys	Val	Leu	Ile	Ala	Ser	Met	Ala	Leu	Leu	Gly	Phe		
175												530				535	540	
177	acc	ctg	ccg	cca	gat	tgc	ggt	gaa	aaa	tta	tcg	ctg	ggt	gtt	acc	atc	2042	
178	Thr	Leu	Pro	Pro	Asp	Ser	Gly	Glu	Lys	Leu	Ser	Leu	Gly	Val	Thr	Ile		
179												545				550	555	
181	ttg	ctc	tcg	ctg	acc	gtg	ttt	ctg	aat	atg	gtt	gcc	gag	aca	atg	ccg	2090	
182	Leu	Leu	Ser	Leu	Thr	Val	Phe	Leu	Asn	Met	Val	Ala	Glu	Thr	Met	Pro		
183												560				565	570	
185	gct	act	tcc	gat	gct	gtg	cca	ttg	tgg	ata	cgc	atc	gtg	ttt	ttg	tgc	2138	
186	Ala	Thr	Ser	Asp	Ala	Val	Pro	Leu	Trp	Ile	Arg	Ile	Val	Phe	Leu	Cys		
187												575				580	585	
189	tgg	ctg	cca	tgg	ata	ttg	cga	atg	agt	cgc	cca	gga	cga	ccg	ctg	atc	2186	
190	Trp	Leu	Pro	Trp	Ile	Leu	Arg	Met	Ser	Arg	Pro	Gly	Arg	Pro	Leu	Ile		
191												590				595	600	605
193	cta	gag	ttc	ccg	acc	acg	ccc	tgt	tcg	gac	aca	tcc	tcc	gag	ccg	aag	2234	
194	Leu	Glu	Phe	Pro	Thr	Thr	Pro	Cys	Ser	Asp	Thr	Ser	Ser	Glu	Arg	Lys		
195												610				615	620	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004

TIME: 11:45:23

Input Set : A:\Mo5176new_rev.txt

Output Set: N:\CRF4\07272004\I303232C.raw

197	cac	cag	ata	ctc	tcc	gac	gtt	gag	ctg	aaa	gag	cgc	tcg	aaa	tcg	2282	
198	His	Gln	Ile	Leu	Ser	Asp	Val	Glu	Leu	Lys	Glu	Arg	Ser	Ser	Lys	Ser	
199				625					630						635		
201	ctg	ctg	gcc	aac	gta	cta	gac	atc	gat	gat	gac	ttc	cg	cac	aat	tgt	2330
202	Leu	Leu	Ala	Asn	Val	Leu	Asp	Ile	Asp	Asp	Asp	Phe	Arg	His	Asn	Cys	
203				640				645				650					
205	cgc	ccc	atg	acg	ccc	ggc	gga	aca	ctg	cca	cac	aac	ccg	gct	ttc	tat	2378
206	Arg	Pro	Met	Thr	Pro	Gly	Gly	Thr	Leu	Pro	His	Asn	Pro	Ala	Phe	Tyr	
207				655				660				665					
209	cgc	acg	gtt	tat	gga	caa	ggc	gac	gat	ggc	agc	att	ggg	cca	att	ggc	2426
210	Arg	Thr	Val	Tyr	Gly	Gln	Gly	Asp	Asp	Gly	Ser	Ile	Gly	Pro	Ile	Gly	
211	670				675				680				685				
213	agc	acc	cga	atg	ccg	gat	gcf	gtc	acc	cat	cat	acg	tgc	atc	aaa	tca	2474
214	Ser	Thr	Arg	Met	Pro	Asp	Ala	Val	Thr	His	His	Thr	Cys	Ile	Lys	Ser	
215				690				695				700					
217	tca	act	gaa	tat	gaa	tta	ggt	tta	atc	tta	aag	gaa	att	cgc	ttt	ata	2522
218	Ser	Thr	Glu	Tyr	Glu	Leu	Gly	Leu	Ile	Leu	Lys	Glu	Ile	Arg	Phe	Ile	
219				705				710				715					
221	act	gat	cag	cta	cgt	aaa	gat	gac	gag	tgc	aat	gac	att	gcc	aat	gat	2570
222	Thr	Asp	Gln	Leu	Arg	Lys	Asp	Asp	Glu	Cys	Asn	Asp	Ile	Ala	Asn	Asp	
223				720				725				730					
225	tgg	aaa	ttt	gca	gct	atg	gtc	gtt	gac	aga	ctg	tgc	ctt	atc	ata	ttc	2618
226	Trp	Lys	Phe	Ala	Ala	Met	Val	Val	Asp	Arg	Leu	Cys	Leu	Ile	Ile	Phe	
227				735				740				745					
229	aca	atg	ttc	gca	ata	tta	gcc	aca	ata	gct	gta	cta	cta	tcg	gca	cca	2666
230	Thr	Met	Phe	Ala	Ile	Leu	Ala	Thr	Ile	Ala	Val	Leu	Leu	Ser	Ala	Pro	
231	750				755				760				765				
233	cat	att	att	gtc	tcg	tagccatatg	ggcgagggtgg	ttattgttat	tggtttatt								2721
234	His	Ile	Ile	Val	Ser												
235				770													
237	ataaaatcaa	tttgttaatt	attaaattaa	taacgaaact	ctttaagtaa	attaaaacta											2781
239	aaaagacact	aaaaaagcac	aaaaaaatag	aaaaatacat	gataaaaccc	atgaactaaa											2841
241	taatacatcc	aagaaaaacc	aaaacaaaaa	aaaaaaaaaa	aaaaaaa	aaaa											2886
244	<210>	SEQ	ID	NO:	2												
245	<211>	LENGTH:	770														
246	<212>	TYPE:	PRT														
247	<213>	ORGANISM:	Drosophila	melanogaster													
249	<400>	SEQUENCE:	2														
250	Met	Lys	Asn	Ala	Gln	Leu	Lys	Leu	Thr	Glu	Val	Asp	Asp	Glu	Leu		
251	1				5				10					15			
253	Trp	Leu	Ala	Val	Arg	Leu	Ala	His	Cys	Ser	Ser	Asn	Phe	Ser	Ser		
254					20				25				30				
256	Ser	Ser	Thr	Arg	Thr	Thr	Ser	Ser	Asn	Gln	Arg	His	Asn	Gln	Gln	Leu	
257					35				40				45				
259	Thr	Thr	Leu	Gln	Pro	Arg	Ser	Leu	Ser	Thr	Lys	His	His	Ser	Asn	Ile	
260					50				55				60				
262	Ala	Ser	Glu	Gln	His	Asn	Ser	Gln	Gln	Gln	Glu	Pro	Ala	Ser	Lys	Asp	
263					65				70				75			80	
265	Glu	Asp	Val	Ala	Asn	His	Gly	Arg	Ser	Asn	Asp	Gln	Gln	Thr	His	Leu	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004

TIME: 11:45:23

Input Set : A:\Mo5176new_rev.txt

Output Set: N:\CRF4\07272004\I303232C.raw

266	85	90	95
268	Gln Gln Leu Asp Ser Ser Asn Met Leu Ser Pro Lys Thr Ala Ala Ala		
269	100	105	110
271	Ala Thr Ala Ala Gly Asp Glu Ala Thr Thr Gln Gln Pro Thr Asn Ile		
272	115	120	125
274	Arg Leu Cys Ala Arg Lys Arg Gln Arg Leu Arg Arg Arg Arg Lys Arg		
275	130	135	140
277	Lys Pro Ala Thr Pro Asn Glu Thr Asp Ile Lys Lys Gln Gln Gln Leu		
278	145	150	155
280	160		
281	Ser Met Pro Pro Phe Lys Thr Arg Lys Ser Thr Asp Thr Tyr Ser Thr		
283	165	170	175
284	Pro Ala Ala Thr Thr Ser Cys Pro Thr Ala Thr Tyr Met Gln Cys Arg		
286	180	185	190
287	Ala Ser Asp Asn Glu Phe Ser Ile Pro Ile Ser Arg His Asp Arg Val		
289	195	200	205
290	Ser Thr Ala Thr Phe Ala Trp Val Leu His Val Leu Gln Val Leu Leu		
292	210	215	220
293	Val Ser Leu Gln Gln Trp Gln Leu His Val Gln Gln Arg Ser Val Leu		
295	225	230	235
296	240		
298	Leu Phe Arg Arg Ile Ala Ala Ser Thr Ile Ala Phe Ile Ser Tyr Leu		
299	245	250	255
301	Gly Ser Phe Ala Ala Gln Leu Lys Asn Ser Ser Ser Ser Ser Ser Ser		
302	260	265	270
304	Ser Asn Ser Ser Asn Asn Ser Ser Thr Gln Ile Leu Asn Gly Leu Asn		
305	275	280	285
307	Lys His Ser Trp Ile Phe Leu Leu Ile Tyr Leu Asn Leu Ser Ala Lys		
308	290	295	300
310	Val Cys Leu Ala Gly Tyr His Glu Lys Arg Leu Leu His Asp Leu Leu		
311	305	310	315
313	320		
314	Asp Pro Tyr Asn Thr Leu Glu Arg Pro Val Leu Asn Glu Ser Asp Pro		
316	325	330	335
317	Leu Gln Leu Ser Phe Gly Leu Thr Leu Met Gln Ile Ile Asp Val Asp		
319	340	345	350
320	Glu Lys Asn Gln Leu Leu Val Thr Asn Val Trp Leu Lys Leu Glu Trp		
322	355	360	365
325	Tyr Asn Ser Ala Asp Glu Gly Phe Asp Gly Thr Tyr Gln Thr Asn Val		
326	370	375	380
328	Asp Leu Arg Ile Pro Pro His Arg Ile Trp Lys Pro Asp Val Leu Met		
329	385	390	395
331	400		
334	Tyr Asn Ser Ala Asp Glu Gly Phe Asp Gly Thr Tyr Gln Thr Asn Val		
335	405	410	415
337	Val Val Arg Asn Asn Gly Ser Cys Leu Tyr Val Pro Pro Gly Ile Phe		
338	420	425	430
339	Lys Ser Thr Cys Lys Ile Asp Ile Thr Trp Phe Pro Phe Asp Asp Gln		
340	435	440	445
341	Arg Cys Glu Met Lys Phe Gly Ser Trp Thr Tyr Asp Gly Phe Gln Leu		
342	450	455	460
343	Asp Leu Gln Leu Gln Asp Glu Thr Gly Gly Asp Ile Ser Ser Tyr Val		
344	465	470	475
345	480		

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004
TIME: 11:45:24

Input Set : A:\Mo5176new_rev.txt
Output Set: N:\CRF4\07272004\I303232C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 6

Seq#:8; N Pos. 9

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/303,232C

DATE: 07/27/2004

TIME: 11:45:24

Input Set : A:\Mo5176new_rev.txt

Output Set: N:\CRF4\07272004\I303232C.raw

L:1022 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0

L:1040 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0